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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Bruce Ha, et al.

HYBRID OPTICAL RECORDING
DISC WITH COPY PROTECTION

Serial No. US 09/393,527

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Group Art Unit: 3621

Examiner: James A. Reagan

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Kathleen A. Mangels

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Date

APPEAL BRIEF

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GROUP 3600

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Commissioner For Patents
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Real Party in Interest

The real party in interest is Eastman Kodak Company, a New Jersey
corporation having a place of business at 343 State Street, Rochester, New York
14650.

Related Appeals and Interferences

None

Status of Claims

Claims 2,4,5 and 9-15 are pending and are each rejected only under 35 USC
Section 103(a).

Status of Amendments

There are no amendments that have not been entered.

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Summary of Invention

The invention is a hybrid optical recording disc 10 (Fig. 1) with copy protection and method of making same. The disc 10 is designed for use in a computer. Its structure is divided between a mastered read-only memory (ROM) 30 and a recordable area 50. The ROM area has a disc identifier (DID) sub-code track 33 (Fig. 2) that carries a common DID for a number of discs. The ROM has a program area 34 that has program tracks for holding pre-recorded programs and a program identifier (PID) sub-code track. The recordable area 50 has lead-in area of recordable area 52, a program area of recordable area 54, a software identifier (SID) track 55 in the recordable area and program tracks of recordable area. The SID is unique for each disc.

The hybrid optical recording disc 10 is made on a substrate 12 that is defined by an outer edge 18 and an inner peripheral edge 14 that surrounds a central hole 16. The central hole 16 permits the hybrid optical recording disc 10 to be mounted in an optical disc transport device which can be used in either a reading or in a recording mode. The substrate 12 is made of transparent, polycarbonate material and is covered with a recording layer 20 that may be written one-time or many times.

Each disc in a lot is given the same DID and the software program recorded on the disc is given a unique SID. The DID does not transfer from the disc to a computer. A user enters the SID to load the program(s) from the disc onto a computer. Data generated on the computer may be saved only to the original disc with the non-transferable DID. If a user tries to copy or download data to another optical disc, the copy or download operation will be interrupted because the other optical disc does not have the DID of the original disc.

The invention solves the problem of copy protecting a writable optical disc. It provides a practical solution because it allows copy-protected discs to be made in advance with a common DID. These discs may be shipped to a software vendor who loads programs on the discs and adds a unique SID to each disc. A legitimate user may store data on the authentic disc and the authentic disc may be used on any computer. However, the invention prevents a user from copying the programs or the data to another disc that does not have the authentic DID.

The invention, as claimed, has three (DID, PID, SID) identifiers (Claims 2, 5, 10, 11, 13, 14). The disc has a recordable area that has a recordable program and data

areas (Claim 4, 12). The DID is in the lead-in area of the ROM (Claims 6 and 15). The SID is in a recordable area. (Claim 2, 5, 10, 11, 13 and 14) The disc has a common DID and a unique SID (Claims 9, 10, 11, 14).

Issues

The claims are patentable over the art and rejection of record.

Grouping of Claims

Claims 2, 4, 5 and 13 stand or fall together on grounds they claim a hybrid optical disc with three identifiers (DID, SID, PID) not shown in the art or rejection of record and with the SID in a recordable area.

Claims 6, 11, 12 and 15 stand or fall together on grounds they claim a hybrid optical disc with three identifiers (DID, SID, PID) and its DID in the lead-in area of the ROM portion of the disc.

Claim 9 stands or falls alone on grounds it claims a hybrid optical disc with two identifiers (DID, SID) and its DID is common to a lot of discs and its SID is unique to each disc in a lot.

Claims 10 and 14 stand or fall together on grounds that they claim a hybrid optical disc with three identifiers (DID, PID, SID) and its DID is common to a lot of discs and its SID is unique to each disc in a lot.

Argument

Summary of the Rejections

Claims 2 and 10 are rejected based upon a combination of Yamagishi (US 5,379,433), Spitzenberger (US 5,930,209) and Oshima (US 5,761,301). The rejection states that Yamagishi shows the DID, PID, and SID of the claims and that one skilled in the art would know to use a substrate with a recording layer, and that Spitzenberger has addressing tracks and uses its addressing tracks to copy protect. The out of order address track is relied upon in the rejection as showing a DID. Oshima is said to have separate and unique DIDs and SIDs.

Claims 4 and 12 are rejected on grounds that Yamagishi has recordable areas for recording data from the computer and for holding recordable programs.

Claims 5 and 13 are rejected on grounds that Yamagishi shows a DID and PID and Spitzenberger shows an SID. The references were applied in a manner similar to rejection of claims 2 and 10.

Claims 6 and 15 are rejected on grounds Yamagishi shows all of the invention except a lead-in area with an SID. Spitzenberger is applied to that limitation on grounds its address track scheme is an SID in a lead in area.

Claim 9 is rejected on grounds that Yamagishi shows a DID and Oshima shows separate drive, disc and software IDs.

Claim 11 is rejected on grounds that Yamagishi shows the basic structure, Spitzenberger uses its lead-in area for a copy protection scheme, and Oshima shows separate DID and SIDs.

Claim 14 is rejected on grounds that Oshima uses separate drive IDs, disc IDs and software IDs.

Introduction to the Argument

The claims have a number of limitations that are not shown in the cited references. The references do not suggest selecting the elements of the references that are used to fashion the rejection, the references themselves do not lead one skilled in the art to the claimed invention, and when the selected features of the references are combined, the resultant combination is not the claimed invention.

Yamagishi does not show a DID, PID and SID

In the final office action all the claims are rejected, *inter alia*, based upon the Yamagishi reference. In rejecting claims 2, 4-6, and 9-15 the rejection erroneously found that Yamagishi has the three IDs of the claims: a disk ID, a program ID and a software ID. The finding is clearly erroneous because Yamagishi has no PID and the alleged SID of Yamagishi is not in the location specified in the claims.

On pages 3, 4 the final rejection finds that Yamagishi has a disk ID at column 2, line 20-column 2, line 22 and program ID and a software ID at column 2, line 49 – column 2, line 63 of the reference. That is erroneous because there are only two ID

codes in Yamagishi, not three. These two codes and their operation are clearly described in the reference as follows:

In the predefined ROM area 2, every medium contains **an identification code (ID code)** with a geometrically embossed configuration for example, successively arranged convexed and concaved patterns) so as not to be rewritable by users. Also included in the disc-like recording medium D is a recording/reproduction area 3 comprising general ROM areas in which predetermined data are prestored so as not to be rewritable by the users and further comprising RAM areas each of which allows recording and read-out of data for the users. [Col. 2, lines 13-22]

• • •

Operation of the protection system according to this embodiment will be described with reference to the flow chart illustrated in FIG. 4. In FIG. 4, the operation begins with a step 100 to read the ID code recorded in the specific ROM area of the recording medium, then followed by a step 200 to check whether the read ID code is coincident with an **ID code contained in the program**, i.e., the ID code of the medium D is compared to an ID code of the program. If the answer is affirmative, the operation advances to a step 300 to executing the program. On the other hand, if negative, the operation goes to a step 400 to stop the execution of the program. [Col 2, lines 36-48]
[Emphasis added]

Yamagishi does not show an SID in a recordable area

There is no ID in the recordable area of Yamagishi. All of the IDs of Yamagishi are written in separate ROM areas. Yamagishi has no “recordable area [that] includes at least one software identifier track” as recited in claims 2, 5, 9, 10, 11 and 13.

The rejection’s reliance upon column 2, line 20-column 2, line 22 in Yamagishi is misplaced. Area D of Yamagishi contains both recordable areas and read only memory areas, but the ID code stored in section D is stored in the ROM area, not in the recordable area. (See Col. 2, lines 23-35)

Spitzenberger does not show “at least one” DID

The rejection admits that the claimed location of the DID in a ROM address track is not shown or suggested by Yamagishi. However, all of the claims are

rejected, *inter alia*, based upon a finding that Spitzenberger shows such a limitation in its non-sequential track addresses. The rejection is erroneous.

Spitzenberger does not show “at least one” DID to authenticate a disk. Instead, Spitzenberger requires that *all* the address tracks participate in order to have a preset sequence and one or more out of sequence addresses. Unless all the tracks are in a linearly increasing sequence, the Spitzenberger system will not work. As such, when the Spitzenberger system is considered in the manner in which it operates, *all* of the addresses are part of the copy protection scheme. In contrast, the claimed invention operates with just one DID in one address track in contrast to Spitzenberger’s system that requires participation by all the addresses on the disc. Rather than requiring a linearly increasing sequence address, the invention achieves the same result with only one DID.

Oshima does not show a software ID

In the final office action, Claims 2, 4, 9-12 and 14-15 are rejected directly or indirectly (as depending from a rejected independent claim), *inter alia*, based upon an erroneous interpretation of the Oshima reference. The rejection finds on pages 6, 10 and 14 that Oshima in Column 36, lines 7-18, discloses separate DIDs and SIDs. That finding is clearly erroneous and is without support in Oshima.

Oshima’s alleged “software id” is an **anti-piracy identifier** that has a four bit code with one bit designated as a **scramble identifier**. The anti-piracy identifier cannot be changed after the disk is made. As such, it is not a software identifier or even a disk identifier.

Oshima describes his Fig. 42 as “a flowchart illustrating the function of a **scramble identifier** and the switching between drive ID and disk ID. . . .” (Col. 6, lines 44-46). Oshima has three IDs: a disk ID, a drive ID and a scramble (software) ID. All disks have scramble IDs and some disks have disk IDs. In Oshima’s system, the scramble ID and the disk or drive ID are transmitted to the password center to obtain a key to open the software.

Oshima describes his scramble and anti-piracy bits as follows:

The disk mastering process is thus completed. The **anti-piracy identifier 865** recorded on the master disk defines how the copyright of the software should be protected, and consists of at least four bits of copyright protection flags, including a flag of one bit to indicate whether the software is equipped with an anti-piracy mechanism, a flag of one bit to indicate whether it contains a low reflectivity barcode portion, a flag of one bit as a **scramble identifier 965a** to indicate whether the software is scrambled or not, and a flag of one bit to indicate whether software dubbing is prevented or not. Since the anti-piracy identifier 865 and the sub public key 861 are combined with the software feature information 863 unique to the software and are encrypted together by using the master secret key for public key encryption, it is not possible to alter them. (Emphasis added; Col. 24, lines 6-20.)

The operation of scramble/software id is described in Col. 35, lines 48-56:

Using the flowchart of FIG. 42, we will describe an operational procedure that handles both the drive ID and disk ID. When installation is started, first the **scramble identifier** is checked in step 901a whether it is ON or not. **If the software is scrambled** and the identifier is OFF, this means an illegal operation, and the installation stops. The installation also stops if the identifier is ON though the software is not scrambled. As already described, this **scramble identifier cannot be altered** and is therefore effective in preventing illegal installation. (Emphasis added)

The final rejection relies upon a subsequent section, Col. 36, lines 7-18, where Oshima refers to a "software id" that is transmitted to the password issuing center with either the disk or drive ID. That portion of the specification is illustrated in Fig. 42 that shows the flowchart of the operation of the scramble identifier with the disk and drive IDs. The "software ID" described in the specification and relied upon in the rejection is the anti-piracy, scramble identifier. The scramble identifier is not a unique ID for each disk and the scramble identifier is not disposed in the recordable area. Thus, the scramble ID is not a DID, as claimed.

The References in Combination do not Show the Invention

All of the claims of the invention have at least a DID in a ROM area and an SID in a recordable area. None of the references show the same IDs in the same locations. Further, none of the references show an SID in a recordable area. Of the three references, only Yamagishi has a user recordable area, and, as shown above,

both its IDs are in a ROM area. Spitzenberger and Oshima are both ROM devices, and thus also fail to show placing an SID in a recordable area.

The Spitzenberger system is incompatible with discs having recordable areas because Spitzenberger requires that *all* sectors have addresses in accordance with its technique of ordered and out of order addresses. If a recordable area had such a system, then its recordable sectors would also have to have such a configuration for the combination to work with Spitzenberger's system. But that would make the recordable area into at least a partial prerecorded area. The addresses would have to be recorded and fixed for the Spitzenberger system to perform its copy protect function.

Application of the Arguments to the Claims

Claims 2, 4, 5 and 13 are patentable over the combination of Yamagishi, Spitzenberger and Oshima because:

- (1) Yamagishi does not show three IDs on a hybrid optical disc.
- (2) Yamagishi does not show an SID in a recordable area of the disc.
- (3) Spitzenberger does not have "at least one" DID but rather uses *all* its address tracks as a sequence check to protect a disk.
- (4) Oshima does not show an SID for each disc in a lot.
- (5) No reference shows or suggests taking a copy protection identifier from a ROM and adding it to a recordable area of the hybrid optical disc.

Claims 6, 11, 12 and 15 are patentable for the same reasons given above and for the further reasons that the art of record fails to show or suggest a hybrid optical disc with three identifiers (DID, PID, SID) and a DID in the lead-in area of the ROM portion of the disc. As pointed out above, Spitzenberger requires using all the address tracks of a disc and it is unlikely that the Spitzenberger scheme would work with recordable data tracks.

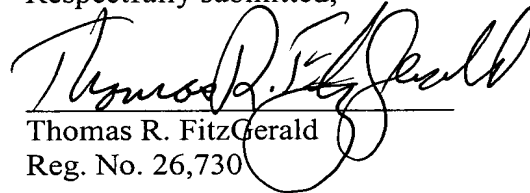
Claim 9 is patentable over the art and rejection of record on grounds that the Oshima fails to show or suggest an SID and does not show an SID in a recordable area of a disk. Oshima has no SID but has only a permanent anti-piracy identifier combined with either a drive ID or a disc ID. Oshima also requires a password network in order to operate its disc. The present invention operates without a password network.

Claims 10 and 14 are patentable over the art and rejection of record on the same grounds given above for claims 2, 4, 5, and 13 and for the further grounds that Oshima has no SID but has only a permanent anti-piracy identifier combined with either a drive ID or a disc ID. Oshima also requires a password network in order to operate its disc.

Conclusion

The claims on appeal are patentable over the art of record. The rejections of record are erroneous, are not supported by the art of record and should be reversed.

Respectfully submitted,



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APPENDIX

1. Cancelled.
2. A hybrid optical recording disc with copy protection for use in a computer, the disc having a substrate and a recording layer disposed over the substrate, the substrate having a mastered read-only memory (ROM) area and which includes addressing tracks dedicated to contain disc addressing data which govern read and record processes to and from a computer, and program tracks dedicated to contain computer software programs, and the substrate having a recordable area for recording therein data generated by a computer user and for reading such recorded data from the recordable area to a computer, comprising:
 - a) the addressing tracks of the ROM area include at least one disc identifier sub-code track containing disc identifier data embedded therein such that the disc identifier data will authenticate the installed disc addressing data and computer software programs for operation in the computer from the hybrid optical recording disc but will not be transferred, thereby providing protection against copying the disc;
 - b) the program tracks of the ROM area include at least one program identifier track containing program identifier data embedded therein which identify the computer software programs; and
 - c) the recordable area includes at least one software identifier track containing software identifier data recorded therein of the computer software programs which are included in the program tracks of the ROM area of the hybrid optical recording disc.
3. Cancelled.
4. The hybrid optical recording disc of claim 2 wherein the recordable area of the hybrid optical recording disc includes a recordable program area for recording therein data generated by a computer user and for reading such recorded data from the recordable program area to the computer.
5. A method of providing a hybrid optical recording disc with copy protection for use in a computer, comprising the steps of:
 - a) mastering a read-only memory (ROM) area and a recordable area on a disc substrate so that the ROM area includes addressing tracks and program

tracks, the addressing tracks including at least one disc identifier sub-code track for embedding therein authenticating disc identifier data which will not be transferred from the computer when installing the disc in the computer, thereby providing protection against copying the disc, the program tracks of the ROM area including at least one program identifier track containing program identifier data embedded therein which identify computer software programs contained in the ROM program tracks;

b) coating an optical recording layer over the mastered disc substrate; and

c) recording in a designated software identifier track of the recordable area a software identifier, the software identifier recording step being implemented in correspondence with the software programs included in the program tracks of the disc's ROM area, the software identifier also being provided to a computer user and corresponding to a hybrid optical recording disc having selected software program titles contained in the program tracks of the ROM area.

6. The hybrid optical recording disc of claim 2 wherein the disc identifier data are embedded in a disc identifier sub-code track within a lead-in area of the ROM area.

7. Cancelled.

8. Cancelled.

9. A hybrid optical recording disc having copy protection for use in a computer, comprising:

(a) a read-only area having preformed information including at least one program and disc identifier data, the disc identifier data being adapted to authenticate a transferred program in the computer to permit the program to be operated by the computer, said disc identifier data being identical to disc identifier data on a plurality of other discs; and

(b) a recordable area including at least one software identifier track containing software identifier data recorded therein of the computer software

programs which are included in the program tracks of the ROM area of the hybrid optical recording disc, said software identifier data being unique and different for each disc with the same disc identifier data.

10. A hybrid optical recording disc with copy protection for use in a computer, the disc having a substrate and a recording layer disposed over the substrate, the substrate having a mastered read-only memory (ROM) area and which includes addressing tracks dedicated to contain disc addressing data which govern read and record processes to and from a computer, and program tracks dedicated to contain computer software programs, and the substrate having a recordable area for recording therein data generated by a computer user and for reading such recorded data from the recordable area to a computer, comprising:

a) the addressing tracks of the ROM area include at least one disc identifier sub-code track containing disc identifier data embedded therein such that the disc identifier data will authenticate the installed disc addressing data and computer software programs for operation in the computer from the hybrid optical recording disc but will not be transferred, thereby providing protection against copying the disc, said disc identifier data being identical to disc identifier data on a plurality of other discs;

b) the program tracks of the ROM area include at least one program identifier track containing program identifier data embedded therein which identify the computer software programs; and

c) the recordable area includes at least one software identifier track containing software identifier data recorded therein of the computer software programs which are included in the program tracks of the ROM area of the hybrid optical recording disc, said software identifier data being unique and different for each disc with the same disc identifier data.

11. A hybrid optical recording disc with copy protection for use in a computer, the disc having a substrate and a recording layer disposed over the substrate, the substrate having a mastered read-only memory (ROM) area and which is comprised of one or more of the group consisting of a power

calibration area (PCA), a program memory area (PMA), a lead-in area, a program area, and a lead-out area, and the substrate having a recordable area for recording therein data generated by a computer user and for reading such recorded data from the disc to a computer, comprising:

a) the lead-in area of the ROM area includes addressing tracks dedicated to disc addressing data which govern read and record processes to and from a computer;

b) a disc identifier sub-code track containing disc identifier data embedded in one of said power calibration area (PCA), a program memory area (PMA), an addressing track of said lead-in area therein, such disc identifier data authentication for computer operation but will not be transferred from the computer to thereby provide protection against copying the disc, said disc identifier data being identical to disc identifier data on a plurality of other discs;

c) the program area of the ROM area contains program tracks dedicated to program data corresponding to computer software programs and such program data will be transferred to a memory device of a computer when installing the hybrid optical recording disc on the computer;

d) the program area of the ROM area includes at least one program identifier track containing program identifier data embedded therein which identifies the computer software programs;

e) the lead-out area of the ROM area contains data instructing a computer of a termination of the ROM program area and data indicating a start of a new lead-in area associated with a recordable area of the hybrid optical recording disc; and

f) the recordable area of the disc includes at least one software identifier track in the recordable area, the software identifier track containing software identifier data recorded therein of the computer software programs which are included in the program tracks of the ROM area of the disc, such software identifier data being provided to a computer user, thereby enabling installation of the disc's software program data on a computer and said software identifier data being unique and different for each disc with the same disc identifier data.

12. The hybrid optical recording disc of claim 11 wherein the recordable area of the hybrid optical recording disc includes a recordable program area for recording therein data generated by a computer user and for reading such recorded data from the recordable program area to the computer.

13. A method of providing a hybrid optical recording disc with copy protection for use in a computer, comprising the steps of

a) mastering a read-only memory (ROM) area and a recordable area on a disc substrate so that the ROM area includes addressing tracks and program tracks, the addressing tracks including at least one disc identifier sub-code track for embedding therein authenticating disc identifier data which will not be transferred from the computer when installing the disc in the computer, thereby providing protection against copying the disc, the program tracks of the ROM area including at least one program identifier track containing program identifier data embedded therein which identify computer software programs contained in the ROM program tracks;

b) coating an optical recording layer over the mastered disc substrate; and

c) recording in a designated software identifier track of the recordable area a software identifier, the software identifier recording step being implemented in correspondence with the software programs included in the program tracks of the disc's ROM area, the software identifier also being provided to a computer user and corresponding to a hybrid optical recording disc having selected software program titles contained in the program tracks of the ROM area.

14. The hybrid optical recording disc of claim 13 wherein said disc identifier data is identical to disc identifier data on a plurality of other hybrid optical recording discs, said software identifier data is unique and different for each disc with the same disc identifier data.

15. The hybrid optical recording disc of claim 10 wherein the disc identifier data are embedded in a disc identifier sub-code track within a lead-in area of the ROM area.